**Before the**
**FEDERAL COMMUNICATIONS COMMISSION**
**Washington, DC 20554**



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| In the Matter of | ) | |
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| Petition for Rule Making of the Cellular | ) | File No. RM- |
| Telecommunications Industry Association | ) | |
| Concerning Implementation of WRC-2000: | ) | |
| Review of Spectrum and Regulatory | ) | |
| Requirements for IMT-2000 | ) | |

To: The Commission

## PETITION FOR RULE MAKING OF THE CELLULAR TELECOMMUNICATIONS INDUSTRY ASSOCIATION

Pursuant to Sections 1.41, 1.49, 1.401 and 1.430 of the Commission's Rules,[1] the Cellular Telecommunications Industry Association ("CTIA")[2] hereby submits a Petition for Rule Making to begin the process of designating additional spectrum for third generation ("3G") wireless service in a manner consistent with the decisions recently adopted at the International Telecommunication Union's ("ITU") World Radiocommunication Conference 2000 (WRC-2000) with respect to International Mobile Telecommunications 2000 ("IMT-2000") services. On behalf of its members, CTIA respectfully requests that the FCC immediately initiate a rule making proceeding.



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[1] *See* 47 C.F.R. §§ 1.41, 1.49, 1.401 and 1.430.

[2] CTIA is the international organization of the wireless communications industry for both wireless carriers and manufacturers. Membership in the association covers all Commercial Mobile Radio Service ("CMRS") providers and manufacturers. CTIA represents more broadband PCS carriers and more cellular carriers than any other trade association.

Designation of additional spectrum for commercial mobile wireless telecommunications service is vital because current and future scheduled spectrum allocations in the United States are neither sufficient for development of new 3G services, nor in harmony with likely worldwide implementation of IMT-2000. Failure to keep pace with world identification of spectrum for IMT-2000 or to harmonize U.S. IMT-2000 frequency bands with the rest of the world will harm U.S. consumers, manufacturers, and service providers. Thus, the Commission should use this rule making proceeding to designate the necessary frequency bands for advanced mobile services to facilitate both global compatibility and the continued competitive development of the wireless industry in the United States.

## I. Background and Introduction

Wireless communications services represent the most dynamic growth market in the entire telecommunications industry. Globally, wireless telephony subscribership is growing at 25 to 30 percent – a rate that may result in a total of one billion worldwide subscribers by 2002.[3] More than 94 million people use wireless phones in the U.S.[4] In Japan, more people subscribe to mobile phone service than fixed-line telephony.[5]

This phenomenal success has occurred largely on "first generation" analog cellular systems and "second generation" digital systems deployed worldwide. This success foreshadows the potential for 3G mobile systems – systems which hold the promise of the convergence of content-rich, multimedia Internet services with the ubiquity of wireless telephony.

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[3] *A Billion Callers by 2002*, Wireless Week, March 13, 2000.

[4] The World of Wireless Communication, Statistics and Surveys, CTIA's Semi-Annual Wireless Industry Survey available at http://www.wow.com/wirelesssurvey/1299datasurvey.pdf.

In recognition of growing consumer demand for multimedia applications and a wide range of services (e.g. video-teleconferencing, high speed Internet, speech and high rate data), the ITU adopted IMT-2000 standards that are inclusive of varying technologies and platforms, best enabling existing systems to operate with the next generation of wireless standards. Commonly referred to as 3G, these standards have become the worldwide vision of a global advanced mobile communications service for the 21st century containing the following key features:

- high degree of commonality of design worldwide;
- compatibility of services within IMT-2000 and with the fixed network;
- toll quality voice service;
- data speeds up to 2 Megabits per second ("Mbps");
- small terminals for worldwide use;
- worldwide roaming capability.

Europe and Asia are now in the process of licensing and are soon expected to deploy 3G systems. All indications are that the services will be even more successful than previously anticipated. For example, in Japan greater than expected customer demand has led NTT DoCoMo to temporarily limit additional sales of its i-mode system until it can increase the capacity of its system.[6] In Europe, companies bid approximately $35 billion for five 3G licenses covering the United Kingdom.[7] Clearly, the stakes are very high for the FCC, U.S. industry, and consumers.

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5 *Mobile Phones Dominate Japan*, April 7, 2000, Reuters.

6 *NTT DoCoMo to resume full shipment of i-mode phone,* Reuters, May 24, 2000 available at http://www.totaltele.com/view.asp?articleID=27764&Pub=TT&categoryid=625

7 *U.K. Wireless Bidding Goes Off Charts,* Wall St. J., Apr. 20, 2000 at A22, available at 2000 WL 3026319.

In June of this year, the ITU successfully completed WRC-2000 which, in large part, focused on identifying additional frequency bands that offer the greatest potential for the global provision of IMT-2000. At the Conference, administrations from around the world agreed that additional bands or portions of the bands between 1 and 3 GHz should be made available for IMT 2000 to meet the worldwide "tremendous growth in mobile communications" and "an increasing demand for wideband multimedia capability."[8] As further described below, administrations from around the world, including the United States, agreed that harmonized spectrum allocations are critical to fulfill the great promise of IMT-2000. Given the decisions reached at WRC-2000, now is the time to begin the process to specify how and when the IMT-2000 spectrum can be made available domestically. Failure to keep pace with world market demand and failure to harmonize U.S. bands for IMT-2000 with the rest of the world will harm U.S. consumers, manufacturers, and service providers. Without adequate spectrum, IMT-2000 services will not be possible. Without harmonization, benefits such as increased access and reduced cost to consumers, global roaming, economies of scale for manufacturers and service providers that lower the cost of equipment and service, access to new voice, data, and multimedia services, and competitive opportunities for U.S. services providers will not be fully realized.

## II. Issues for Consideration

For more than a decade, administrations from around the world have recognized the need for harmonized allocations for wireless communications systems in order to enhance global roaming capabilities for subscribers and to better achieve manufacturing economies of scale. To

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[8] *Additional frequency bands identified for IMT-2000,* WRC-2000, Res[Com5/24] (*hereafter* Res[Com5/24]).

this end, the 1992 World Administrative Radio Conference (WARC-1992) identified 230 MHz of spectrum for IMT-2000 in the bands 1885-2025 MHz and 2110-2200 MHz.[9] Many countries from around the world have implemented (or will soon implement) digital wireless systems within some portion of the paired IMT-2000 bands identified at WARC 1992, however, the United States deviated from the international identification by assigning PCS licenses spectrum entirely within the 1850-1990 MHz band. While PCS operators may evolve their systems to IMT-2000, the band is not aligned with IMT-2000 band plans in other countries; therefore, these systems will not realize the benefits of harmonization provided by WARC 1992. Moreover, from an international allocations perspective, the U.S. PCS band plan "orphaned" the IMT-2000 sub-band at 2110-2200 MHz.

The IMT-2000 bands identified at WRC-2000 provide the United States and other administrations with another opportunity to conform domestic band plans with paired international allocations in support of true global wireless telecommunications services. Continuing to recognize the benefits of "harmonized utilization of the spectrum for the terrestrial component of IMT-2000,"[10] WRC-2000 identified 1710-1885 MHz and 2500-2690 MHz as spectrum bands that administrations should consider for IMT-2000 terrestrial implementation in addition to those previously adopted at WARC-1992.[11]

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9 *See* S5.388 of the Radio Regulations. *See also,* 47 C.F.R. 2.106, footnote 746(a) of the FCC's Rules.

10 *Id.*

11 *Id. See also,* Footnote S5.AAA, *Frequency Allocations,* WRC-2000, Article S5.

While the WRC acknowledged that the full use of these bands by some administrations will not be possible given existing domestic uses[12], it is clear that a "critical mass" of administrations from around the world will focus IMT-2000 deployment within some portion of the WARC-92 bands and the 1710-1885 MHz and 2500-2690 MHz bands. Given these developments, CTIA urges the FCC to initiate a proceeding to examine the implications of, and impediments to, implementation of these bands in the United States.

Many factors support the urgent need for an inquiry into these matters. First, the development of IMT-2000 will provide tremendous benefits to consumers in the form of increased access, lower prices, and new products. The sooner the Commission designates spectrum for IMT-2000 that can be harmonized for use around the world, the sooner manufacturers can begin development of equipment and the sooner carriers can begin providing additional 3G services.[13] Second, governments around the world are going forward with spectrum assignments for IMT-2000. The U.S. industry will be at a disadvantage if the Commission does not act quickly. Third, as noted below, although the United States has indicated that studies of the bands identified worldwide for IMT-2000 will commence, no formal process or timetable for

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[12] Res[Com5/24] notes that "not all administrations may need" all of the 1710-1855 MHz and 2500-2690 MHz bands for IMT-2000 or that "due to usage by and investment in existing services," some administrations "may not be able to implement IMT-2000 in all of those bands." Further, Footnote S5.AAA recognizes that the international designation of 1710-1885 MHz and 2500-2690 MHz for IMT-2000 does not preclude the use of those bands for any application of the services to which they are allocated and does not establish any priority for IMT-2000 in the international Radio Regulations.

[13] CTIA fully expects that 3G services will be deployed in bands currently used for commercial mobile services. Indeed, WRC-2000 identified 806-960 MHz as appropriate bands for the provision of IMT-2000 noting the existing usage of first and second-generation mobile telephony in many countries. *See Frequency Bands for the terrestrial component of IMT-2000 below 1 GHz,* WRC-2000, Res[Com5/25]. CTIA believes that the amount of spectrum available in the U.S is insufficient to meet the growing demand for service and, because it is not consistent

completion of those studies has been developed. It will take years to complete studies, develop rules for use of spectrum, issue licenses and migrate existing users before new services can be deployed. It is imperative that this process starts as soon as possible. Fourth, ITU-R Working Party 8F has been tasked to study the overall objectives, applications and technical and operational implementation for the future development of IMT-2000 as well as systems beyond IMT-2000.[14] Notably, the group has been assigned the task of developing harmonized plans for use of the IMT-2000 bands. These studies are expected to be completed and the results reported prior to the next World Radiocommunication Conference, or by 2003, whichever is earlier. CTIA urges the FCC to be an active participant in the development of these studies. Finally, as further discussed below, the FCC is now constrained by Congressional deadlines to auction part of the spectrum identified by the WRC-2000 for IMT-2000. Studies must be performed now to ensure that these auctions proceed in a manner that is harmonious and consistent with global use of this band while still meeting the Congressional timetables.

The FCC already has taken some steps to consider spectrum requirements for broadband mobile services in its recently adopted Spectrum Policy Statement ("Policy Statement").[15] There, the FCC indicated its intent to consider an allocation of 90 megahertz for "advanced mobile and fixed communications service," which could include IMT-2000 systems. The 90 MHz would

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with uses around the world, the benefits of harmonization are not realized.

[14] *See, e.g., Studies to consider requirements for the future development of IMT-2000 and systems beyond IMT-2000 as defined by ITU-R,* WRC-2000, Res[GT Plen-2/3]. U.S. Working Group 8F is next scheduled to meet in San Diego in August of this year.

[15] *See In the Matter of Principles for Reallocation of Spectrum to Encourage the Development of Telecommunications Technologies for the New Millennium*, Policy Statement, FCC 99-354 (released Nov. 22, 1999).

come from the 1710-1755 MHz band paired with the 2110-2150 MHz and 2160-2165 MHz bands.

If the approach articulated in the Policy Statement is implemented, the FCC will severely disadvantage U.S. wireless interests in the global 3G market. Auction of the 1710-1755 MHz band would result in the lower portion of the band currently targeted internationally for IMT-2000 being mismatched, from an international perspective, with the 2110-2150/2160-2165 MHz band. The 2110-2170 MHz band is part of the spectrum identified for IMT-2000 at WARC-92. Countries that have not adopted the U.S. PCS band plan are generally licensing this spectrum paired with the 1920-1980 MHz band. Because the U.S. PCS band is mutually exclusive with the band plan developed for 3G operations in the 1885-2025 MHz band, the first band identified for IMT-2000 at the ITU, global roaming will be impossible in this band. This fact makes band pairing in the 1710-1885 MHz band that much more important. Throughout Europe and in many other developed countries, 1710-1885 MHz is used extensively for GSM operations. Pairing 1710-1755 MHz with 2110-2150 and 2160-2165 MHz would not conform to the predominant use of these bands around the world and would place the United States out-of-step with the other major markets. While such pairing may turn out to be the only viable option in the United States, it should not be the first option and should not be implemented without due consideration of all alternatives. This lack of harmony for U.S. industry will have a negative effect both domestically and internationally, where the United States will have to compete both with Europe and Asia, two regions where harmonized IMT-2000 deployment has already begun.

While the 1710-1755, 2110-2150, and 2160-2165 MHz bands will soon be available for licensing[16] in the United States, the existing domestic uses of the 1755-1850 MHz and 2500-2690 MHz bands in the United States present significant challenges to the FCC, particularly in light of the results of WRC-2000.[17] These challenges need to be studied to fully determine 1) the extent of existing and planned uses of the bands, 2) the benefits associated with such use, 3) sharing feasibility between existing uses and IMT-2000, 4) transition issues that would need to be resolved if either of these bands were made available for use by IMT-2000,[18] and 5) the timing for possible future availability of these bands. Although NTIA and the Department of Defense

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[16] The FCC is permitted, under the Balanced Budget Act of 1997, to auction 1710-1755 MHz at any time after January 1, 2001, and is presently obligated to complete the auction and to have auction revenues submitted to the Treasury by September 30, 2002. Likewise, the FCC is required to deposit auction revenues from the 2110-2150 MHz band by the same date. *See* Balanced Budget Act, Pub. L. No. 105-33 (1997).

[17] According to the NTIA, the 1755-1850 MHz band is currently used for: 1) Federal Aviation Administration fixed low capacity microwave systems carrying air traffic control data, radar data, etc. between a nationwide network of air traffic control facilities; 2) Department of Energy links related to control of power supply; 3) Department of Agriculture backbone links to mobile radios in support management of National Forests and other public lands; 4) Department of Interior fixed links supporting communications to Native American reservations and earthquake monitoring; 5) Coast Guard links supporting vessel traffic control and safety operations; and 6) Department of Defense satellite command links, tactical microwave systems, and combat training systems used in cooperation with many Administrations around the world. The 2500-2690 MHz band is assigned domestically to the MMDS and ITFS services for distributing multichannel video programming on a point-to-multipoint basis. The FCC recently allowed these licensees to provide two-way data services. *See, In the Matter of Amendment of Parts 1, 21, and 74 to Enable Multipoint Distribution Service and Instructional Television Fixed Service Licensees to Engage in Fixed Two-Way Transmission*, MM Docket No. 97-217.

[18] Possible transition issues include the establishment of technical aspects and criteria to allow for possible sharing of bands identified for IMT-2000; possible or potential relocation of incumbent services, determination of the cost of relocating existing services and determination of what U.S. domestic/international regulatory changes would be necessary to make identified bands available for use by IMT-2000; and, provision of replacement spectrum for applications moved out of identified bands or portions of these bands. Many of these issues will need to be reviewed in the context of the National Defense Authorization Act for Fiscal Year 2000, S. 1059, 106th Cong., 1st Sess. (1999), available in Westlaw at 1999 CQ US S 1059.

have indicated they have initiated preliminary studies to determine the potential availability of 1755-1850 MHz for advanced commercial uses, no date has been set for completion of the studies, and no final analysis has been released. CTIA is not aware of any initiative to study the domestic availability of the 2500-2690 MHz band by either the FCC or other appropriate forum. Therefore, CTIA urges the Commission to expedite the work on such studies and to establish mechanisms to allow U.S. industry to participate fully.

CTIA strongly urges the Commission to consider all the relevant options for mobile services and for enhancing global spectrum harmonization before licensing any spectrum for next generation wireless services, including IMT-2000. In this regard, the FCC should seek the active participation of NTIA and government spectrum users such as the Department of Defense to fairly assess the availability of 1755-1850 MHz, and consider the public interest tradeoffs of designating the band or parts of the band for IMT-2000. In addition, the FCC should conduct a simultaneous analysis with regard to the 2500-2690 MHz band. Premature auction of either of the bands (as proposed by the FCC in its Policy Statement) without such analysis, and without taking into account the decisions made at WRC-2000, will result in the U.S. being out of step with the rest of the world regarding deployment of IMT-2000. This missed opportunity would have serious consequences for U.S. consumers, manufacturers, and service providers.

## III. Conclusion

CTIA respectfully requests that the Commission initiate a comprehensive proceeding that will result in the harmonized designation of spectrum for the development of advanced mobile services. It is imperative for the U.S. to identify additional spectrum and to harmonize domestic spectrum use to the extent possible with use around the world to assure that the U.S. economy

and consumers benefit fully from the next generation of wireless services and technologies. Actions to auction relevant bands before detailed analysis is completed would be premature and would harm U.S. consumers, manufacturers, and service providers.

Respectfully submitted,

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July 12, 2000

**Certificate of Service**

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